Module Details

Module Code:	DATA C8Z02
Full Title:	Applied Database Systems APPROVED
Valid From::	Semester 1 - 2019/20 (June 2019)
Language of Instruction:	English
Duration:	1 Semester
Credits::	5
Module Owner::	Stephen Larkin
Departments:	Unknown
Module Description:	The aim of this module is to introduce students to the principles and techniques involved in creating and using relational databases. Upon completion, students will have designed and implemented a database system and carried out data manipulation and data definition statements.

Module Learning Outcome	
On successful completion of this module the learner will be able to:	
#	**Module Learning Outcome Description**
MLO1	Design and use a relational database for storing, manipulating and querying structured data.
MLO2	Import and export data to and from a relational database.
MLO3	Evaluate the suitability of data models for a given data management requirement.
MLO4	Discuss the purpose and characteristics of big data systems and be able to design and query a document-based NoSQL database.

Pre-requisite learning
Module Recommendations   *This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named DkIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).*
No recommendations listed

Module Indicative Content
Data What are data, data formats, use and handling of data
Database Role of database, data types, table design and implementation
Database operations Create, Read, update, delete.
SQL: Data Definition Creating and managing tables, required data, views, referential integrity and general constraints.
SQL: Data Manipulation Simple Queries, Sorting, Aggregate Functions; Grouping, Subqueries; Simple Joins; Update, Insert, Delete.
SQL: Functions Using Character and Number functions; Data and conversion functions.
Introduction to Big Data Systems Introduction to big data systems – cloud computing, Hadoop, MapReduce, NoSQL databases inc document-driven databases.

Module Assessment

Assessment Breakdown	%
Course Work	60.00%
Project	40.00%

Module Special Regulation

Assessments

Full Time On Campus

Course Work			
Assessment Type	Continuous Assessment	**% of Total Mark**	60
Marks Out Of	0	**Pass Mark**	0
Timing	n/a	**Learning Outcome**	1,2
Duration in minutes	0		
Assessment Description The continuous assessment component will normally consist of one practical lab-based test and two minor assessments.			

Project			
Assessment Type	Project	**% of Total Mark**	40
Marks Out Of	0	**Pass Mark**	0
Timing	n/a	**Learning Outcome**	1,2,3,4
Duration in minutes	0		
Assessment Description Data Project 2. This will form part of a joint project with Statistics using R and will involve the creation and manipulation of a relational database.			

No Practical

No Final Examination

Part Time On Campus

Course Work			
Assessment Type	Continuous Assessment	**% of Total Mark**	60
Marks Out Of	0	**Pass Mark**	0
Timing	n/a	**Learning Outcome**	1,2
Duration in minutes	0		
Assessment Description The continuous assessment component will normally consist of one practical lab-based test and two minor assessments.			

Project			
Assessment Type	Project	**% of Total Mark**	40
Marks Out Of	0	**Pass Mark**	0
Timing	n/a	**Learning Outcome**	1,2,3,4
Duration in minutes	0		
Assessment Description Data Project 2. This will form part of a joint project with Statistics using R and will involve the creation and manipulation of a relational database.			

No Practical

No Final Examination

Reassessment Requirement
No repeat examination *Reassessment of this module will be offered solely on the basis of coursework and a repeat examination will not be offered.*

Module Workload

Workload: Full Time On Campus

Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours
Lecture	Contact	No Description	Every Week	3.00	3
Directed Reading	Non Contact	No Description	Every Week	2.00	2
Independent Study	Non Contact	No Description	Every Week	3.00	3
				Total Weekly Learner Workload	8.00
				Total Weekly Contact Hours	3.00

Workload: Part Time On Campus

Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours
Practical	Contact		Every Week	3.00	3
Directed Reading	Non Contact		Every Week	2.00	2
Independent Study	Non Contact		Every Week	3.00	3
				Total Weekly Learner Workload	8.00
				Total Weekly Contact Hours	3.00

Module Resources

Recommended Book Resources

    Connolly, Thomas & Begg, Carolyn. (2015), Database Systems, 6th. Pearson, [ISBN: 0132943263].

Supplementary Book Resources

    Joel Murach. (2015), Murach's MySQL, 2nd. Mike Murach & Associates, [ISBN: 1890774820].

    Andrew Comeau. (2015), MySQL Explained: Your Step-by-Step Guide, OSTraining, [ISBN: 151942437X].

    Stephen Morris, Peter Rob, Carlos Coronel, Keeley Crocket. (2013), Database Principles: Fundamentals of Design, Implementations and Management, 2nd. Cengage Learning, Inc, [ISBN: 140806636X].

This module does not have any article/paper resources

Other Resources

    Website, w3schools,
    http://www.w3schools.com/sql/

    Website, mysql Tutorial,
    http://www.mysql.com/